



Fermilab

Technical Division, D&TD

Systems Development & Support Group

VAX Tevatron Data Transfer Plan

Introduction

The purpose of this plan is to propose steps to move Tevatron magnet measurement data from DEC VAX computers to Sun sparc servers running UNIX. At the completion of these tasks, the Tevatron magnet data will be stored in two formats: some data will reside on disk in ASCII files, and some data will reside in a Sybase database. This plan is being proposed due to the upcoming decommissioning of the VAX. The VAX computer system is old, support at the laboratory is officially non-existent, and the Development and Test Department intends to decommission its VAX's at some future date. Thus the Tevatron magnet data needs to be relocated to a computer architecture with continuing support for the future.

Completion of tasks outlined in this plan will require collaboration between physicists and members of the Software Development and Support Group. Persons with knowledge of the magnets and their associated measurements (physicists) will be doing the processing of data, ultimately putting the data into the text files which will be moved to UNIX. Persons from the Software Development and Support Group will be creating the directory structures and database tables for preserving the data, although some design help will likely come from the physicists. Documentation will come from both groups of people.

Overall there are 15 types of data. Of these, only three basic types have been requested to be archived in Sybase. The remaining 12 types of data will be kept as ASCII files in the UNIX directory structure.

The plan is divided into six phases. An estimate for the total time effort (the time required to complete all of the tasks) follows each phase. Concurrency and percentage of time spent on each task will affect the calendar time necessary to complete each task. Obviously some tasks cannot be started until others are completed. However, it should be noted that in some instances tasks can be occurring concurrently so that there will be some time overlap.

If the plan tags a task with "[external support]", it indicates that the effort to complete the task will come from outside the Software Development and Support Group (typically a physicist). If the plan tags a task with "[with external support]", it means that the Software Development and Support Group will be working with others from outside the group (again, typically a physicist).

Proposal

Phase 1 Process all VAX data, putting all results in to ASCII files

1. Backup all Tevatron VAX data to 8mm tape
2. Correct and process Low Beta Spool data (on VAX) - [external support]
3. Put raw data for Tevatron Dipoles in to standard format (on VAX) - [external support]
4. Review and update Tevatron Dipole rework and assessment information (on VAX) - [external support]
5. Get standard quadrupole data in the same current shape as dipole data (on VAX) - [external support]
6. Put Low Beta quadrupole data in the same format as the standard quads (on VAX) - [external support]
7. Process the quench data so that it exists in ASCII files (on VAX) - [external support]
8. Process strength data so that it is in a useful text file format (on VAX) - [external support]
9. Possibly process Tevatron Dipole remnant field data (on VAX) - [external support]

Time effort estimate: 9 weeks

Phase 2 Move the files from the VAX to UNIX

1. Design directory structures for all VAX data on UNIX
2. Identify the data which is supposed to be preserved - [external support]
3. Copy all ASCII files which are to be preserved for all types of data to the new directory structure

Time effort estimate: 1 week

Phase 3 Document the ASCII file formats and directory structure

1. Document the UNIX directory structure for Tevatron measurement data
2. Describe and document the file formats for harmonics data files - [with external support]
3. Describe and document the file formats for quench data files - [with external support]
4. Describe and document the file formats for strength data files - [with external support]
5. Describe and document the file formats for the remaining types of data - [with external support]
6. Put all file format documents on the WEB

Time effort estimate: 3 weeks

Phase 4 Design the database tables

1. Identify the data to be preserved in Sybase - [external support]
2. Design Sybase tables for harmonics data
3. Design Sybase tables for quench data
4. Design Sybase tables for the strength data

Time effort estimate: 4 weeks

Phase 5 Load the data into Sybase

1. Create the database for Tevatron measurement data
2. Create loaders for each of the data types to be put in to Sybase
3. Load harmonics data in to the Sybase tables
4. Load quench data in to the Sybase tables
5. Load strength data in to the Sybase tables

Time effort estimate: 3 weeks

Phase 6 Document the database structure

1. Describe and document the harmonics tables for Tevatron measurement data
2. Describe and document the quench data tables for Tevatron measurement data
3. Describe and document the strength data tables for Tevatron measurement data
4. Put all Tevatron database documents on the WEB

Time effort estimate: 1 week

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